D301.81:
31/9

UNIV. OF FLA. LIB ★ DOCUMENTS DEPT.
SEP 21 1981
★ U.S. DEPOSITORY ★

Combat Crew

strategic air command

★ ★ ★ ★

SEPTEMBER 1981

HANDS on STRATEGIC READINESS – The Challenge for SAC Crew Members

General B. L. Davis
Commander in Chief, SAC

My return to SAC brings me face to face again with SAC's motto, "Peace is Our Profession." This motto has served us well through the years to keep the overall mission of deterrence up front in our thinking. However, I recall as a SAC crew member that I had to translate our motto into something more practical if it was to be useful to me and my crew on a daily basis. I have reflected on those days and would like to describe what I believe were some of the more meaningful goals for us then — I believe they remain valid today. These include proficiency, safety, security, and a personal commitment to the mission. Regardless of the particular strategic system, in the final phase we rely on SAC crew members to put their hands on the hardware and make it work to meet the challenge.

Proficiency

Individual and Crew Proficiency. The first and foremost responsibility of a SAC crew member is to be proficient — a proficient crew member can make the weapon system perform within the criteria provided in applicable directives. Technical knowledge, procedural skills, and an understanding of the people around you are critical elements of individual proficiency. I highlight individual and crew proficiency because I believe every member should be proficient as an individual and as part of the crew if the crew is to realize its collective capability. We are recognized pros in this business of strategic readiness, but we cannot become complacent over the continuing need to spend time in the books and mastering the proven procedures. Institutionally, crew proficiency is achieved and sustained daily through our SAC formal training programs — be sure *your* training program keeps you proficient.

Safety

Safe Operations. There are many obvious reasons for promoting safe practices through a good safety program. While we have been unable to eliminate all mishaps, we clearly have reduced our losses and enhanced our readiness through our emphasis on safety — we want to continue that emphasis. Nevertheless, I recognize we need realistic training which incurs a level of risk, but crew members who know their weapon systems and the correct operating procedures can usually remain within acceptable levels. Here again, we rely on your hands-on involvement to help keep the training program balanced between EWO realism and reasonable peacetime risks. Be your own safety officer — it pays.

Security

Protection of all Classified Materials and Information. You work with materials

D301.81:31/9

and information which require special handling procedures. Each crew member has to know and follow these procedures without compromise — and be sure others around you integrate these procedures into their daily work habits. Constant security awareness is essential and immediate steps should be taken if there is any doubt about the protection of classified materials or information. We simply cannot accept a less than adequate security program.

Personal Commitment

Personal Commitment to the Mission. Let me be sure you know that I have great confidence and pride in the SAC crew force. Your individual and collective record of performance is clearly without equal anywhere — I repeat — without equal anywhere. One of the reasons SAC crews have been able to perform so well is that historically you have committed yourselves to readiness at a level of excellence sufficient to provide a margin of assurance — so that you are always equal to the challenge. We cannot predict with precision what our future challenges will be, so our daily standards are high. We do not have the luxury to be casual about our efforts to sustain the highest possible level of readiness.

The Eighties

This decade will present a variety of challenges to those of us engaged in the profession of national defense. Strategic modernization programs will produce increased capabilities during the eighties, but the readiness challenge for us today is to put our hands on what we have now — and keep it ready. I pledge to you that I will do all I can to provide the best possible support across the board. But, as crew members, you are the men and women who make the final determination on just how ready we really are. Perhaps, one of you in years to come can reflect on your days as a crew member and say to your successors — stay proficient, be safe, keep it secure, and remember your personal commitment drives it all. I am privileged to join you as we meet the challenge to keep SAC ready — the American people are depending on it.★★★★

Combat Crew

Magazine of the Strategic Air Command - 32nd Year of Publication

GEN. BENNIE L. DAVIS
COMMANDER IN CHIEF, SAC

BRIG. GEN. HAROLD J. M. WILLIAMS
Inspector General

COL. RICHARD A. PATRICK
Director of Safety

STAFF

CAPT. ROSS W. PHILLIPPE
Editor
G. FRANCIS FARRELL
Associate Editor
SSgt. DAVE WADE
Art Editor
MARY JANE ABBOUD
Editorial Assistant

UNIV. OF FLA. LIB ★ DOCUMENTS DEPT.
SEP 21 1981
★ U.S. DEPOSITORY ★

IN THIS ISSUE

Giant Sword '81 4
Black Hole 8
Time Has Come 12
First Priority 14
CFIC Corner 20
BIG "I" 22
Fatigue 26

ON THE COVER:
Salute to Giant Sword '81

SACRP 127-1 **VOL. XXXI NO. 9** **SEPTEMBER 1981**

COMBAT CREW is an internal publication of the Strategic Air Command with the sole purpose of promoting safety. The contents of this magazine are informative and not to be considered as directive in nature. Facts, testimony and conclusions of all mishaps printed herein may not be construed as incrimination under Article 31 of the Uniform Code of Military Justice. All names, dates and places used in conjunction with mishap stories are fictitous. Written permission must be obtained from Headquarters, Strategic Air Command, before any material may be reprinted by other than U.S. Air Force organizations. Use of funds for printing this publication has been approved by Hq. USAF. Distribution FX, controlled by IGFC. SAC units submit distribution requests through local PDO. Reader to copy ratio 9:1

Subscriptions are available from: The Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Price: $14.00 per year domestic, $17.50 if mailed to a foreign country; or $1.20 single copy. Contributions are encouraged as well as comments and criticisms. Direct correspondence with the Editor is authorized. Address correspondence to Editor, COMBAT CREW, Hq. SAC IGFC, Offutt AFB, Ne. 68113. Authority to publish this periodical automatically expires on 7 April 1982, unless its continuance is authorized by the approving authority prior to that date.

Department of the Air Force

SAC LOADING COMPETITION
GIANT SWORD

Giant Sword

SAC teams from throughout the command again assemble at Ellsworth AFB for the SAC Loading Competition — GIANT SWORD 81. Each of SAC's 20 bombardment wings is represented by a competition team composed of a munitions load crew, an aircraft crew chief, a security police element and a team officer and noncommissioned officer.

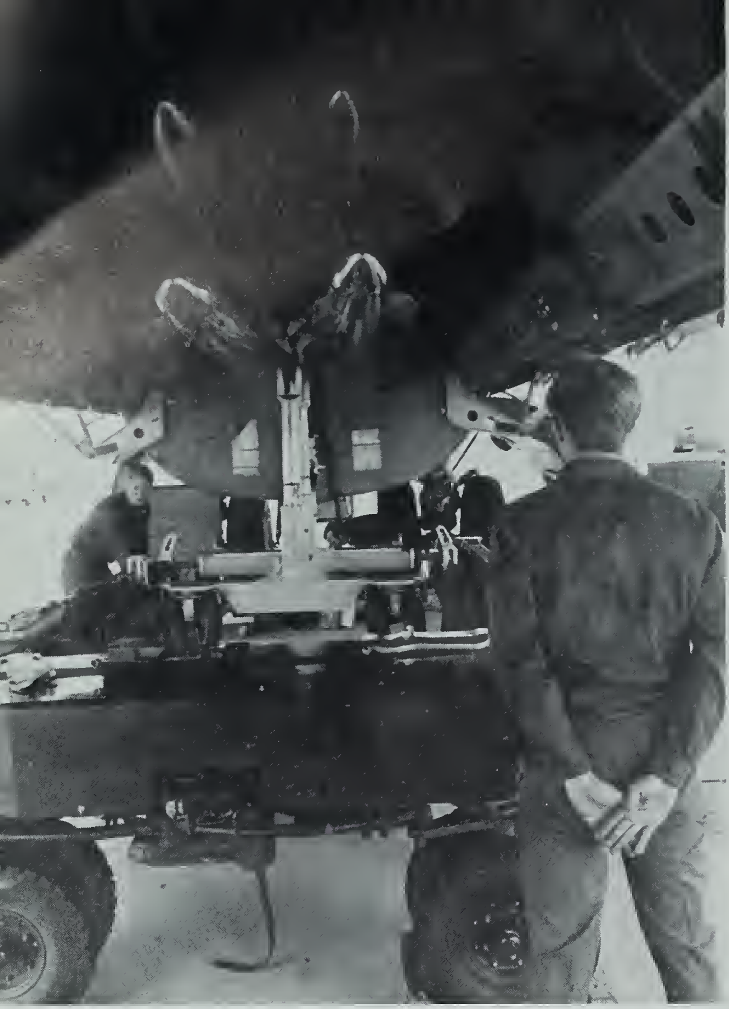
This annual competition is designed to enhance **esprit de corps**, promote a competitive spirit among units, improve loading proficiency and security police skills and aid in the evolution of new concepts.

No actual live weapons will be loaded. Using training devices only, each munitions crew will be required to upload one or two different classes of weapons: gravity weapons or short range attack missiles and gravity weapons.

Munitions loading will be accomplished on four types of aircraft — a B-52D, G and H and an FB-111. Each team will be evaluated on the condition of its equipment, two munitions loadings and a written test. The maximum possible score for each loading team will be 1,250 points.

Security police teams will be scored to a maximum of 1,500 points. Realistic tactical security exercises involving the protection as well as the attack and recapture of priority resources will be evaluated in addition to a written test and M-16 rifle firing.

The aircraft crew chief will be evaluated on a written test, preload and postload exercises and can earn a maximum of 250 points.



Giant Sword

New features for GIANT SWORD 81 include conventional munitions operations and use of the multiple integrated laser equipment system for security exercises. Conventional munitions loading operations have been added as a separate category for those bomber units with a conventional contingency mission. Use of the laser system provides a more realistic capability for combat training and evaluation through the use of low level laser transmitters and blank ammunition in the weapons of the security forces and laser detectors worn by each individual involved in an exercise.

Awards to be presented on completion of the competition include the Barrentine Memorial Trophy which is awarded to the wing team with the best overall score. The trophy is retained by the win-

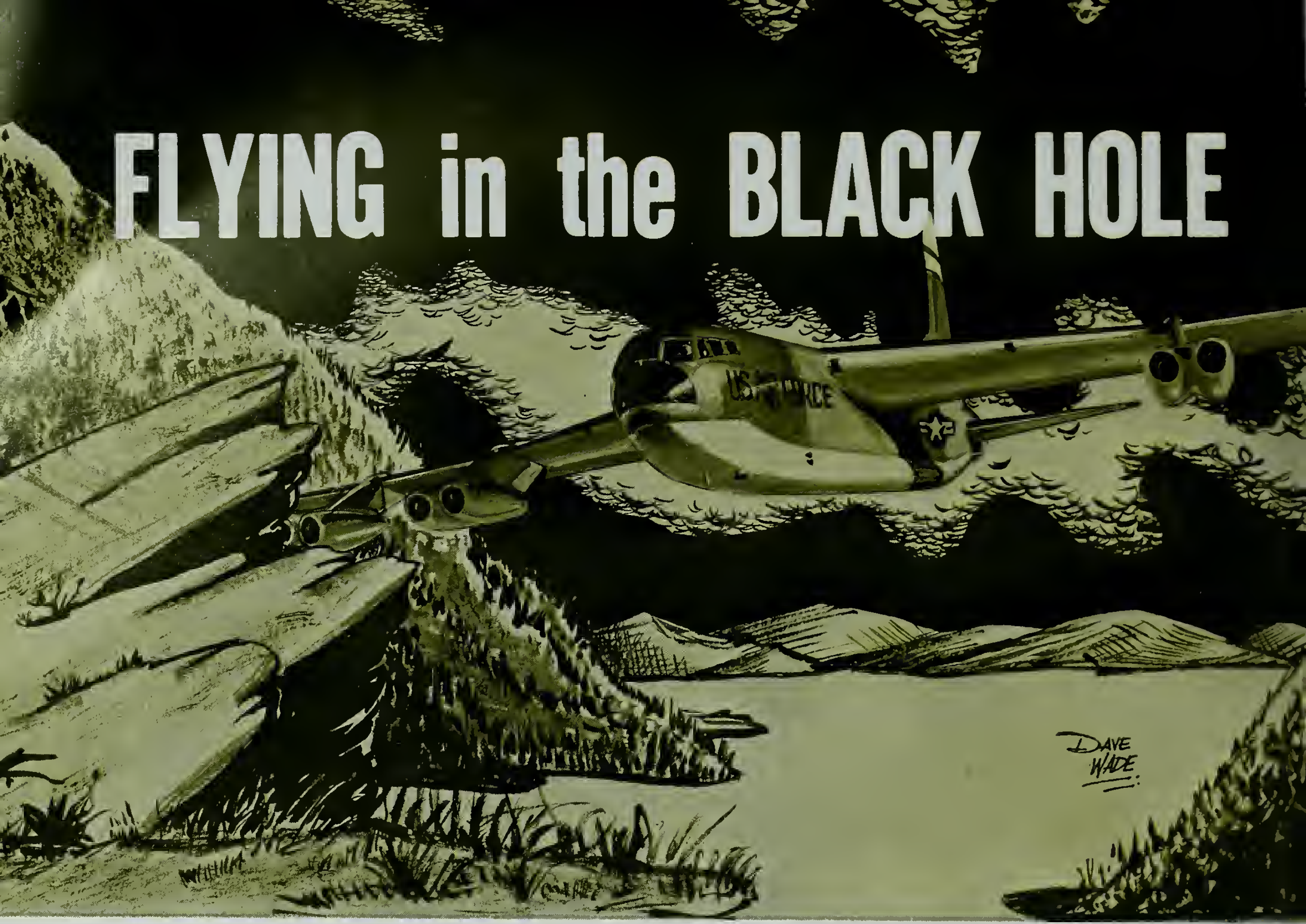
Giant Sword

ning team's wing until the next year's competition. It is named in honor of CMSgt Wilbur R. Barrentine, a member of SAC from the mid fifties until his death in 1970.

Other awards include: a Best in SAC Loading Competition plaque for permanent retention by the wing; individual awards for the winning team members; and awards to winners in individual sub categories. In addition, plaques will be presented to the parent squadrons of the following: Best Munitions Load Crew; Best Security Police Unit; and Best Bomber Crew Chief.

All munitions loading activities will be open to the public and scores will be posted in the competition headquarters.

FLYING in the BLACK HOLE



“Pilot, I still have high terrain at 10-1 o’clock, five miles, and I still can’t paint over it.”

“OK, radar, I still don’t have it on the scope yet; call me when it’s three miles out.”

“I think it’s on the map, pilot, about 8,000 feet high, a ridge, but I can’t see it on the EVS yet, pretty black out there.”

“OK, co, keep looking outside. If it’s that high, I think we’d better start a . . . what’s that?”

“Master caution light . . . let’s see . . . pilot, I’ve got a generator circuit breaker open, I mean a bus tie circuit breaker open, number five. I’ll bring it back with the others.”

“Hey, get some of that power back; we just lost the SRAM down here. Radar, we’re going to have to recycle.”

“Quiet, nav! Co, leave the generator alone, let it run by itself. I don’t want it coming off the line during a bomb run down here.”

“Down here . . .” Those words snapped the pilot’s head back around to the EVS scope. He needed only a quick glance to see that he was in trouble. The terrain trace that he had been following religiously for the last 45 minutes was now one-quarter of the way up the scope. His pullback on the yoke was instinctive, but he had to feel the B-52 slow down before he remembered to add power. The sudden “G” loading and the noise of the straining engines brought the rest of the crew back to their immediate task of surviving low level. As the bomber topped the ridge, the copilot saw that the radar altimeter ribbon had gone out of view and that the airspeed had dropped to 175. The rest of the mission was successfully flown at IFR altitude in complete silence except for the usual checklist responses. Each crew member would retain his own memories of the incident, but none would be as vivid as the pilot’s, because no one but the pilot saw the shadow that was a tree just to the left of the wing as they had flown beneath it.

That crew had made a very dangerous mistake. All of the primary crew members had managed to become involved with a very minor malfunction of their aircraft and had forgotten that they were flying in an extremely hostile environment — night mountainous terrain avoidance. However, the mistake had been a blessing, for they became a better crew for it. Their low level flying would now be marked by professionalism, discipline, and common sense. They became vividly aware that the low level terrain avoidance flight demanded it from them and that their lives depended on their airmanship in that regime. Their lesson should be learned by all. B-52 TA flight is a demanding phase where man must interface with machine in airspace that is very limited. Crews fly in rough terrain at altitudes that are frighteningly low, even on an instrument approach. At six miles a minute, they are subjected to constant turbulence, while they interpret fallible electronics and maneuver 180 tons of uncooperative aircraft. For the most part, SAC crew members do this extremely well. They and their procedures are well tested, and the equipment is well maintained. However, failures do occur, in both machine and man, in which cases disaster is only a few scant seconds away.

The low level environment is full of dangers: birds destroy engines, uncharted towers are a potential threat, and the general aviation pilot continues to exercise his right to fly through the low level training routes at the same altitudes as the military. Nevertheless, the greatest threats to safe TA flight are in the cockpits of the B-52s. They are fatigue, inattention, and distraction among the crew members. Each is deadly, but can be overcome.

Fatigue is an insidious threat to any phase of flight, but it is multiplied in its causes and effects in low level. Just bouncing around inside a noisy airplane is, in itself, fatiguing. Add to it the incredible work load placed on the shoulders of our crew members, the fact that they are strapped into parachutes and wear helmets, and you have some of the classic causes of fatigue. The effects are well known: lack of judgment, loss of motor skills, etc.

Exacerbating this fatigue problem are the lower altitudes and longer legs flown on today's training missions. Lower clearance planes are forcing pilots to hand fly most of the legs themselves, giving less time to the copilots. This practice leads to increased fatigue for the pilots and to inattention by the copilots, as they read their maps, look outside, and monitor engine instruments.

It is quite easy for a crew member not actively flying or navigating the aircraft to become somewhat relaxed and inattentive to the events around him. Something off to the side of the aircraft on the ground might be more interesting than the terrain ahead. Flying with updated avionics and a good nav team can lead many copilots to become complacent about backing the navigator up. In Red Flag, it can be more interesting for him to watch the fighters and the SAM sites while trusting the flying to the pilot.

The pilot too can become inattentive. He can so channelize his attention to keeping that airspeed within two knots and the terrain trace coincident with the HRL, he can miss the fact that the radar altimeter has failed at 800 feet. His eyes will see the radar altimeter, but his mind won't compute it. Inattention is a matter of degree, from total situational incomprehension to momentarily not noticing an important instrument or gauge.

Recently. a crew had a clearance plane drive slowly down from 800 feet to zero. They noted it during the early portion of the low level. Had this happened one hour later on a bomb run, they might not have had the presence of mind to bring it into their realm of consciousness.

From another aspect, a recognized malfunction can lead to one of the most dangerous threats to flight safety: distraction. Every pilot should remember the story of the L-1011 that crashed in the Florida Everglades. The crew did not get a "down and locked" indication on all of the gear (although they were indeed down). Their distraction by the burned out bulb allowed the aircraft to descend 800 feet and crash after the autopilot had kicked off. That kind of distraction happened to the crew at the beginning of this article, and is quite commonplace in a B-52 because of the number of systems that can malfunction during low level.

Watch a crew when a caution light comes on, especially at night. All heads turn to the light. If it happens to be on the copilot's side, many pilots feel some obligation to watch his every move in correcting the malfunction. Obviously, there is extreme danger if both of the pilots are working a malfunctioning system and neither is flying the aircraft.

I propose that, aside from the TA warning, there are no lights in the B-52 that require immediate action. None require the pilot to take his eyes from his instruments and from the TA trace. It would behoove each crew to determine their response to a warning light at low level that always has, as the first step, a positive climb to IFR or minimum safe altitude. After that, any system can be brought back on the line, or shut down as necessary when the aircraft is in a safer flight regime. These actions would prohibit a crew from becoming victims of distraction, a problem that has cost SAC too many men and planes. We certainly cannot afford to lose any more, as there are too few of either left.

Our mission dictates that the low level environment becomes less and less forgiving. We are flying closer to the ground and in worsening visual conditions. Flying good TA is difficult in the mountains, even in daylight, but at night it is a challenge to even the most grizzled SAC crew dog. The important thing is to admit that fact. Prepare well for the flight by resting and eating properly to fight fatigue. Keep everyone actively involved in the mission; give the copilot more stick time, as it will provide a break in the mission activity, combating both fatigue and inattention. Convince everyone on the crew that training missions are deadly serious and that your safety margins are slim down there. Everyone must pay attention to the flight. Finally, fly the aircraft when something goes wrong. At those altitudes and near mountains, it only takes a second or two for you to find yourself in a situation from which recovery is impossible.

B-52/KC-135
Part Task Trainers

Major Richard P. Amisano
Det 1, 4200 TES

Remember Icarus? He was the son of Daedalus who, in an effort to escape imprisonment, built artificial wings of wax and feathers. Well, this poor fellow flew too near the sun, melted the wax off his wings, fell into the sea and drowned. That's a tough way to learn how to fly. Too bad he didn't have some safe way of practicing altitude control before he actually got airborne.

Whether the story of Icarus is true or not, man has always been fascinated with flying, and finally devised the means to do it. The history of early aviation is rife with disastrous attempts to fly before one really knew how. But man, in his ingenuity, did something about that too. He invented flight simulators. Today they are commonly called training devices. Ground-based training devices offer the safest way of learning to cope with hazardous situations before they are encountered. The most vivid examples of their utility are illustrated by the fact that man was able to land on the moon and make a perfect space shuttle flight the first time out. Of course, these space programs utilized the latest technology in their training devices and operated them in an environment designed to take full advantage of their unique capabilities.

You may be surprised to learn that the Strategic Air Command has recently integrated the latest technology training devices into its CCTS curriculum. These devices were procured as a result of numerous SAC and Air Force studies that indicated new training device technology could provide a reduction in costs and lowered fuel consumption. Even more important, because air refueling represents the single largest expenditure of petroleum resources during airborne training, SAC turned to new technology trainers to complement the aircraft as the primary training media.

Contract award for a B-52 Air Refueling Part Task Trainer (ARPTT) was made on 6 Oct 75 to Redifon Flight Simulation, Ltd, Crawley, England, on the basis of technical adequacy, supportability, price and other factors. Concurrently, a KC-135 Boom Operator Part Task Trainer (BOPTT) was built by the Aeronautical Systems Division (ASD) of Air Force Systems Command.

The B-52 ARPTT and the KC-135 BOPTT are complementary devices which aid in teaching the aerial refueling task to pilots and boom operators respectively, while on the ground. Don't be confused by the term "part task," as it only means that they are designed to teach one specific aspect of the mission. In this case, both trainers are designed to teach air refueling.

The design of these two devices is rather intricate, so I'll just give a brief rundown of the major components. The ARPTT has a B-52G cockpit mounted on a full motion system (six degrees of freedom) for correct simulation of all kinetic motion cues associated with air refueling. It has a camera model visual system using a 1/50 scale model of the KC-135 tanker and a closed circuit television camera. The tanker image is projected onto a large screen in front of the B-52 cockpit windows. Realistic simulation of the visual interrelationship of the two aircraft is achieved because both the camera and the model are fully gimballed, allowing accurate display of all aspects of both aircraft in pitch, roll and yaw. Simulation of aircraft aerodynamic characteristics and systems operation were the subject of close scrutiny and a great deal of dynamic adjustment to get the trainer to fly like the airplane. General purpose digital computers integrate the ARPTT's motion, visual and aerodynamic systems into high fidelity air refueling simulation. B-52H aerodynamics were also developed for use in the ARPTT and may be substituted for the B-52G flight characteristics.

The ARPTT instructor station incorporates many modern technological features that allow the instructor to manipulate events to an extent not always possible in the aircraft. The instructor can select day, dusk or night conditions with any combination of visibility and turbulence parameters. Capability also exists to vary gross weights, change fuel off-loads and insert malfunctions commonly encountered during air refueling. Any refueler, regardless of proficiency, can be challenged in this training device.

The ARPTT also has a record and playback feature, similar to television's instant replay, which allows the student to play back all instrument, motion, visual and control column actions in any given eight minute segment. This gives the student immediate feedback as he is able to study his control of an air refueling as many times as he desires. A similar feature allows pre-recording of various demonstrations, such as the boom limits demonstration, to be played to the student at any time without having an instructor in the cockpit.

The BOPTT incorporates a camera model visual display, image generator and projection system much like the ARPTT, except that additional optics add parallax cues to give three-dimensional perspective. These added optics are essential for adequate boom operator depth perception. The fixed-base boom operator station is identical to the KC-135 aircraft boom operator aft refueling position, with all control and display functions operable. Off-the-shelf computers integrate the boom operator system with the visual image and create a dynamic air refueling scene.

The BOPTT also has the capability for providing air refueling training in any combination of day/night situations with variable visibility and turbulence conditions. Most receiver aircraft can be simulated, including the B-52, FB-111, C-5, F-4, F-106 and F-16. Various skill levels of receiver pilots, from novice to expert, can also be selected. With all these features and the capability for 25 malfunctions, a trainer session can become quite a challenge, even for experienced operators. The BOPTT has proven so successful that SAC is adding an additional student station to the existing complex. This should extend the life of the cur-

Continued on page 19

Capt Bruce Slasienski
453d FTS

A T-33 was enroute between two European USAF bases. When the pilot in the rear seat attempted to change position, he inadvertently deployed the life raft in the survival kit. The inflated raft pushed the stick forward and the T-bird pitched over. The pilot in the front seat attempted to correct the dive as the pilot in back deflated the raft. Then an explosion occurred and the cockpit filled with talcum powder which looked very much like smoke. The pilot identified the problem as engine failure, stop-cocked the throttle and secured the engine. As the haze cleared, the pilot in back thought the engine had flamed out and he ejected. The front-seater then deadsticked the T-bird into a field.

The obvious factor in this accident was the lack of communication, but the underlying factors are more important in understanding why the events occurred at all. Without making any assumptions about the preflight condition of the pilots, we can investigate the human factors which interacted to cause damage to an airplane which was previously in pretty good shape.

One of the reasons flyers envy no other occupation is the way the earth spreads out below in a neat patchwork of greens, browns, yellows and even sometimes the most brilliant whites in the whole world. Add some of those puffy clouds that just beg you to pop through and the radiant heat from the sun nicely offset by the air conditioning system and you have what has got to be the second best feeling in the world.

Maybe these two pilots were on the way home. Gethomeitis is a serious problem. I believe it killed the father of my best friend about 16 years ago, but I don't believe it was a factor here. I don't think proficiency, weather, mechanical operations, air traffic control, health, or physiological factors were causes either. The primary factor in this accident was misdirected attention. Each individual in that airplane was attending his own problems: he was in his own world.

"THE TIME HAS COME..."

We spend most of our time emphasizing what is known as the critical 11 minutes during takeoff and landing. So once we make takeoff and climbout, the pressure is off. The world is spread out at our feet and landing is a couple of hours off, so we enjoy the view, content with being in the air in a dependable, comfortable airplane with all the problems left behind — the radio is quiet, the interphone is quiet, and we are lost in our own thoughts. Then the raft inflates in one world and . . . "Old George is sure going to laugh about this in the bar later on. Wham! The raft deflates in a cloud of talcum — what a mess in here; how dumb can you get! Something's wrong! Too quiet! RPM winding down, EGT dropping; son-of-a-gun, lost the engine, airplane is diving, engine must have failed, now the airplane is out of control — better get out now — so long T-bird!"

About the same time in the other world up front . . . "Nice day out here; whoops, nose is going down, getting some resistance on the stick, nose still going down, everything else seems okay. RPM, E-Wham! . . . Smoke! . . . Throttle off . . . Maintain aircraft control . . . Canopy just departed the aircraft . . . There goes the back seat!"

Yes, two separate worlds. Plenty of attention, but the focus of the attention was directed toward handling the particular event occurring in each world. Ever feel like a flight of six on a B-52, or a flight of two in an F-4? The desire is to return to the feeling of contentment. Get rid of the problem with as little disturbance as possible. Direct professional action. The bold print doesn't tell anyone to talk; no one tells anyone to talk, at least not at first. "These steps are time critical and will save your life." True enough but how about your crew? They have no more desire to depart the airplane than you do. But if they do make their own decision to leave, it is probably because they are operating in an information vacuum. So, **maintain aircraft control; bring the rest of the crew back into your world; analyze the situation; perform the required actions; talk to the crew as much as possible.**

Communications is the key. That is just where we started from. Communications can bring help in solving the problem — in the T-33 situation noncommunications added another obstacle to the pilot which resulted in an accident. Communications is a human factor that can be dealt with on the ground — it should become habit — just like the rest of the emergency procedures. Insist that the flow of information goes both ways. Make communications a professional responsibility not a social relationship.

A FIRST PRIORITY . . . for the navigator

Capt Randall S. Foster
46th AREFS, K.I. Sawyer AFB

All crewmembers experience critical moments of flight that test their ability to handle an emergency and safely recover the aircraft. But aviation is also demanding of crewmembers when an emergency is not a consideration.

You and I know good crew coordination and professionalism are essential in all phases of flight. Each crewmember must execute his particular duties to the best of his abilities. Simultaneously, each crewmember must also work smoothly with other crewmembers. During critical phases of flight the navigator in particular has an excellent opportunity to be of great assistance to the pilots. If an aircraft malfunction requires a pilot to respond to an emergency situation, plus control and fly the aircraft, the navigator can be the essential link for insuring safe recovery.

First priority for the navigator, like the pilot, is to fly the aircraft. Although his hands aren't physically on the yoke, he can advise the pilot when he is not meeting safe airspeed limits or is not on the correct attitude. Monitoring airspeed and the altimeter during an emergency or critical phases of flight is an important aid that is sometimes forgotten or overlooked by navigators. There may be other items he can accomplish to aid the pilot; but none, I believe, are as important as airspeed and altitude. There are many past mishaps in the files where a perfectly sound aircraft was flown into the ground on approach. If the navigator had been monitoring the approach, all of these could probably have been avoided.

The aircraft speed is as easily monitored by the navigator as is the altimeter. Not monitoring either instrument is foolish, but in an emergency the altimeter is especially important. Poor airspeed management with plenty of altitude may be survivable; but superior airspeed control and poor altitude management can be a killer. At the lower altitudes and during descent, close monitoring of the altimeter is essential, especially during an emergency. Each crewmember must know the altitude the aircraft is cleared to and insure that the clearance is not violated.

While monitoring the altitude, the navigator has plenty of time to double-check the approach plate and make sure the assigned altitude is a safe one. With a serious emergency, the crew oftentimes must recover to the closest suitable emergency base. Being unfamiliar with the terrain at a strange base, the navigator must use his radar to continuously clear the aircraft from high terrain on radar, regardless of what the final aircraft controller may give as an assigned altitude. For navigators, the altimeter is generally a slow moving and dull instrument to watch. For that reason, it may be easily forgotten in a stress situation but few instruments are more important. The closer you get to the ground, the higher your interest in the altimeter reading should be.

A good crewmember is knowledgeable about the duties and procedures of other crewmembers. Crew coordination hinges on a concept of smooth cooperation, with each member backing up the other. This does not mean the navigator should get in the pilot's way. Although knowledgeable of aircraft systems, he is not the pilot. The pilots, of course, look to the navigator to back them up and expect the navigator to maintain a wide perspective of what is happening in the aircraft.

Listen for ground instructions and clearances. Say as little as possible over interphone and be prepared to handle all communications with the aircraft controlling agency if your pilot requests you to handle the radios. Discuss communication procedures with the pilot on mission planning day so that confusion is minimal during an inflight emergency. If you handle the radios during an emergency, be brief and concise. Keep abreast of the immediate needs of the aircraft and continue to check the altimeter, airspeed and aircraft configuration.

The recovery of an aircraft that is experiencing serious performance problems is a difficult but gratifying ordeal. The pilot's skill and knowledge makes a big difference in the prospects of a successful recovery. Likewise, the navigator who is alert and ready for an inflight emergency can also make a difference between success and failure!

Support Fro

m The Who?

CAPTAIN R. L. CARPENTER

Saint Peter: "Well, you're dead. You said when you went into the Air Force that you were going to help out, do your best, become a Mr. Terrific, etc., etc. You became a manager and you followed a lot of rules, didn't you?"

Me: Yes.

Saint Peter: Ten thousand men have now sat in that same chair where you used to sit and 9,999 of them made the same boo-boos you did. Do you call that doing your hum-dingingness?

Me: No, sir.

Saint Peter: Why didn't you pass on your set of rules for the rest to follow?

Me: Because I called myself the Gib; the guy in back, and although the rules worked okay for me, I assumed each Gib taking the job would make his own rules and read the regulations.

Saint Peter: What about brand new guys, like 2/Lt Shmaltzenheimer and that new Captain straight from the cockpit? You think they dreamed about managing 200 men like you did for 20 years?

Me: No.

Saint Peter: I'm going to give you one more chance, before I flip this button that sends you hurtling on your long trip down—by the way, got an altitude card?

Me: No, sir.

St. Peter: Well, get one or I'll have to send you down any way. Meantime, you're going back in time 40 years to when you retired. Leave a good checklist for those Air Force knotheads and we might let you float around on these white fluffies for a time. Get going.

1. Giving credit and praise. Do it in front of all the people you can muster.

2. Getting to know your job. Get in there and get your pinkies dirty before you start work. The men will take a liking to you and more important, they'll respect you.

3. Buddy-buddy. Don't.

4. Arguing. Don't argue with anyone under any circumstances. You cannot win, even if you think you won.

5. Giving criticism for mistakes. Swallow it.

6. Casting blame. Forget it.

7. Show a man he's wrong. Avoid it like the plague.

8. Paving the way with the boss. He can help you only if you talk to him.

9. Courtesy. Forget it and you're dead up and down the ranks.

10. NCO Authority: Let them make mistakes. Then find the guy who's not making any and fire him. He's sandbagging. Give a man a job and then get out of his way and let him do it.

11. Building egos. True and honest praise builds driving troops.

12. Getting your dander up. Do it about once a year in the mirror.

13. Changes. When it is not necessary to change, it is necessary not to change.

14. When undermanned. Cut out the nonsense. Eliminate the gravy trains, fat cats, and nice to have positions. Put the men and resources where the work is.

15. Nagging. If you don't like it from your wife, don't do it to your men.

16. Being wrong, Say so. Now. Then get yourself right. Study the facts.

17. Challenge. Nothing is more effective and men love nothing better.

18. Dramatics. Pictures speak louder than words.

19. Listening. Force yourself to keep your mouth shut. You may hear something that will keep you from flubbing, once.

20. Discipline. If a man's wrong he knows it. Let him go and you're dead. Men on the fence will follow him; not you.

21. Policy letters. Eliminate all but the most important. They waste everybody's time and give inspectors ammo to mow you down.

22. Last but not least. He leads best who serves best.

Me: Now, Saint Peter, will you open those pearly gates?

St. Peter: No, stupid. You're dreaming. Wake up.

OPS HAZARDS

YOU'VE HAD IT!

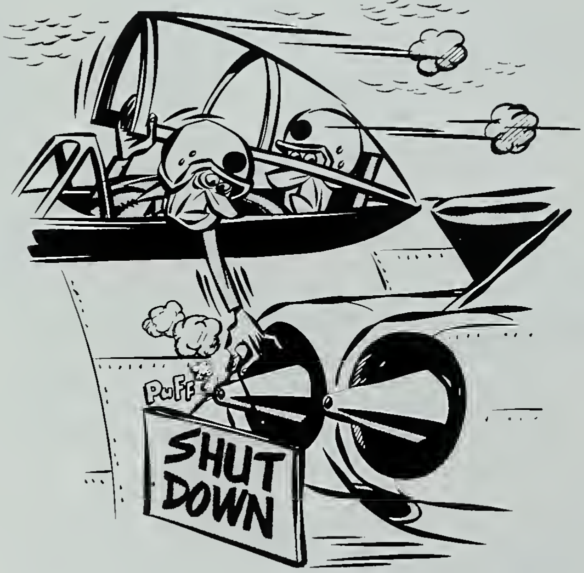
A THRILLING EXPERIENCE

The preflight weather briefing indicated VFR weather for a two ship fighter navigation flight. However, a PIREP from an incoming crew stated a large line of imbedded thunderstorms lay to the north. The pilots were aware of the PIREP.

The flight took off and made a VFR climb to FL 370. Having climbed above the weather the flight then proceeded north enroute. About 50 miles north of departure base, flight lead experienced a left engine flameout with his throttle stabilized at 96%. He made a turn back toward the departure base but was unable to hold altitude even with the right engine in afterburner. The aircraft descended into the imbedded thunderstorms.

The pilot transitioned to an instrument crosscheck once inside the clouds and found his main ADI to be inoperative. He also found the aircraft in a 120 degree bank, nose low attitude. He regained control using the standby ADI and emerged from the thunderstorm at 13,000 feet MSL. After restarting the engine he rejoined with his wingman, declared an emergency and landed without further difficulty.

No cause could be determined for the engine flameout. However, a faulty relay prevented the right generator from assuming the entire AC load after the left engine flamed out. This caused the failure of the main ADI. There is a Dash One requirement to check this relay if flight in instrument conditions is anticipated. The pilot did not check the relay since he intended to be VFR throughout the flight. He had not counted on the loss of an engine while overflying weather. The resulting flight is one he will probably remember for awhile.

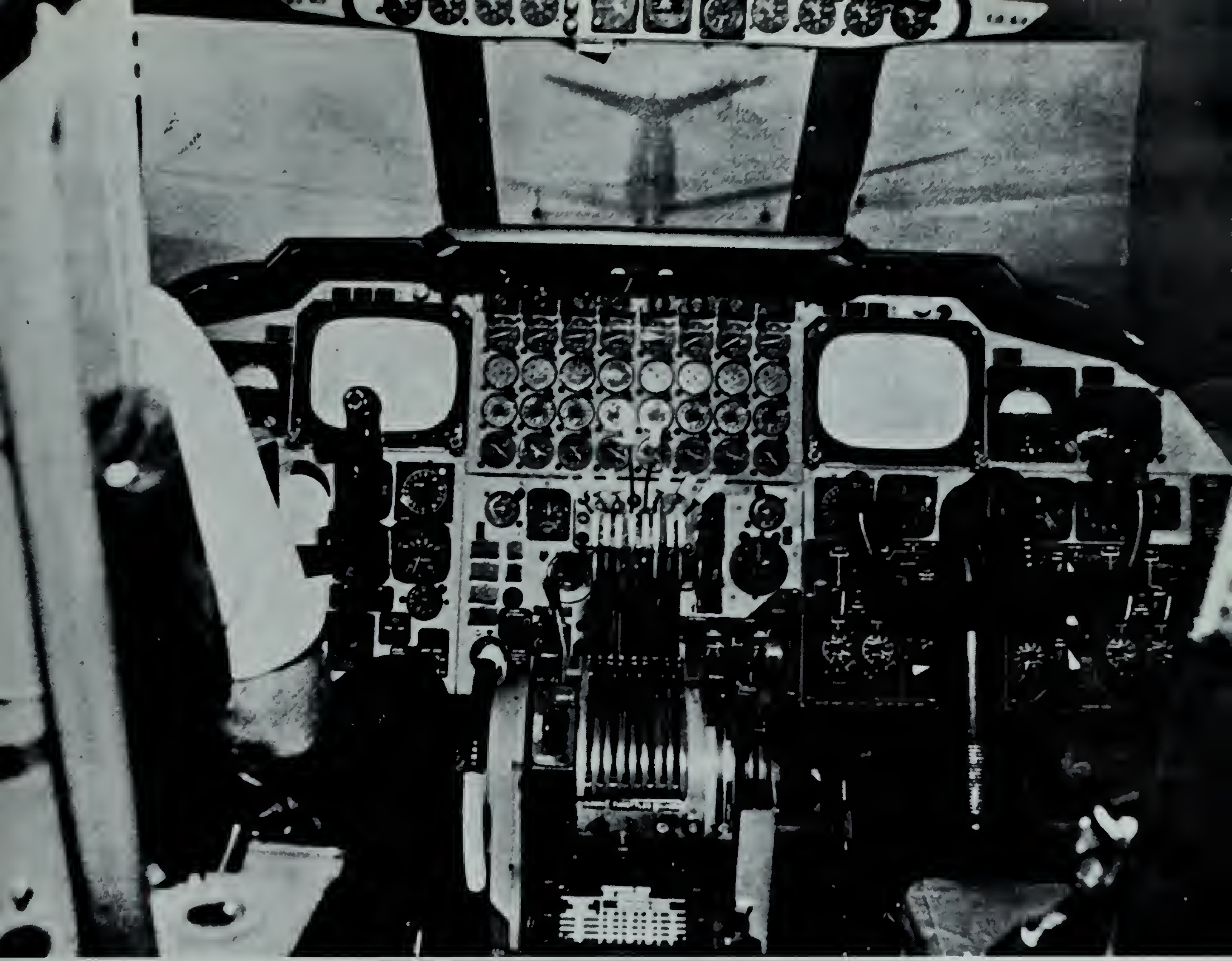


LOSS OF STEERING

Flight lead of a three ship MITO taxied from the hold position to the runway. After lining up within 10 degrees of runway heading, the pilot and copilot simultaneously reached over to transfer the steering ratio lever from taxi to takeoff and land position. The pilot reached it first and moved it to the proper mode. The copilot does not remember but must have moved the landing gear lever to the up position while watching the aircraft for runway alignment.

The aircraft immediately started veering to the right. Realizing he had lost control the pilot commenced abort procedures and moved the steering ratio lever to taxi with still no regain of steering. The extra pilot in the IP seat noticed the gear handle was up. He unstrapped and placed the gear handle down and steering was regained immediately.

The aircraft made an abrupt turn back toward centerline; however, the right tip gear contacted the inboard set of VASI lights, raised up and over a barrier cable housing assembly and came back down on the right edge of the runway. The aircraft stopped on runway centerline awaiting maintenance. Maintenance specialists found no significant damage to the aircraft however; inboard set of VASI lights were damaged beyond repair.



Continued from page 11

rent BOPTT and provide the capability to support more students.

The ARPTT and BOPTT devices are impressive, but their real potential can only be realized when they are incorporated into total training programs with specific training objectives. This has been done at Castle AFB, through the combined efforts of Det 1, 4200th Test and Evaluation Squadron, and the 93d Bombardment Wing. Castle's CCTS training curriculums were modified to take advantage of ARPTT and BOPTT capabilities in Feb 80. The results are seen in lowered fuel costs, reduced airspace congestion, reduced accident potential and improved training for crewmembers. For each B-52G student, 6.6 flying hours (five air refueling events) are avoided with 10.5 ARPTT training hours added. Comparing B-52 flying hour costs (FY80) and ARPTT hourly costs ($243), a net avoidance of approximately $27,000 in fuel costs alone was realized for each B-52G/H student. Approximately 91 B-52G/H students will be trained at Castle AFB in 1981, resulting in a $2.4 million cost avoidance. With similar modifications to the KC-135 curriculums, 7.5 flying hours (three air refueling events) per boom operator student are now being avoided using 14.5 BOPTT trainer hours. At the FY80 cost per KC-135 flying hour and $108 per BOPTT hour, net savings are $18,000 per student. In 1981, approximately 175 boom operators will be trained at Castle AFB, resulting in $3.2 million in fuel costs avoided.

Savings are great, but the most important question of any training program is whether we still have the quality of crewmember SAC needs to perform its mission. The answer is a resounding yes. Exhaustive studies involving over 200 B-52 pilots and 150 KC-135 boom operators have proven beyond a shadow of a doubt that students trained in both the ARPTT or BOPTT and their respective aircraft attain much higher levels of proficiency, and reach them sooner, than students using either the trainer or the aircraft alone.

Indeed, if Icarus had received the benefit of only a single ride in a modern SAC training device, he might well have been prepared to "slip the surlies." Today's SAC aircrews, through the use of trainers like the ARPTT and BOPTT, will be prepared to handle the situation if their wax melts.

CFIC CORNER

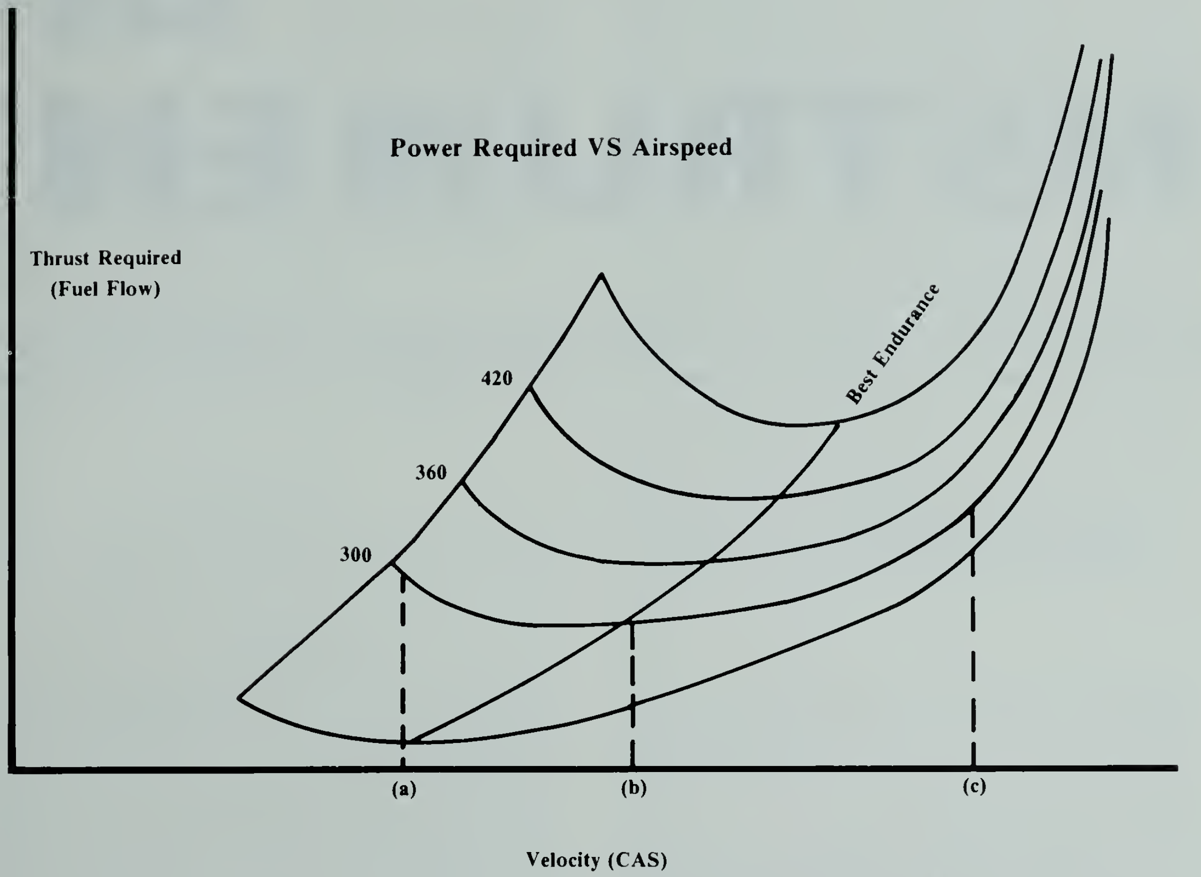
255 PLUS or MINUS ONE

Capt Gary Dietzel
93d BMW, Castle AFB

Periodically, the B-52 air refueling airspeed of 255 KIAS is challenged as not being the optimum airspeed for the maneuver. Actually, SACR 60-4, Vol IV allows KC-135 pilots a maximum tolerance of 240 KIAS to 275 KIAS. This wide range was established to minimize tanker power manipulations which could hamper receiver operations. It should, therefore, be assumed that there is some flexibility in the 255 KIAS procedure. In spite of this, many B-52 pilots argue that the basic refueling airspeed should be increased.

It is generally agreed that B-52 air refueling handling characteristics improve at higher airspeeds. The primary reason for this is speed convergence (stability) which occurs on the front side of the power curve. (See Figure 1) Notice how flat the power curve is near best endurance speed, showing how one power setting (Fuel Flow) meets the requirement for a broad range of airspeeds. Best endurance airspeed essentially represents L/D max on B-52 power curves. Velocities below best endurance are divergent to power settings. Velocities above best endurance are convergent to power settings. In other words, it would be easier to maintain a constant airspeed when flying faster than best endurance than it would be flying slower than best endurance. Best endurance for the B-52 at 30,000 feet ranges from 220 KIAS for a 300,000 pound aircraft to 270 KIAS for a 488,000 pound aircraft. Additionally, any increase in velocity will result in an increase in dynamic pressure, thus improving control effectiveness.

Currently, there are two occasions when a pilot will fly faster than 255 KIAS during air refueling; one is a T.O. 1-1-1C-15 procedure and the other an option as discussed in the B-52 flight manual. T.O. 1-1-1C-15 states "if 255 KIAS is less than tanker charted endurance speed, tanker endurance speed will be used for refueling airspeed". The other occasion is B-52 heavy weight refueling during which it is generally desirable to fly in the 270 KIAS range. During Big Whip, a 565,000 pound B-52 air refueling test, flight test personnel found 285 KIAS greatly improved aircraft handling characteristics. Each



a. Airspeed tends to diverge on "backside" of the power curve.
b. Airspeed tends to converge on "front side" of the power curve.
c. L/D max corresponds with best endurance line (low point) of B-52 power curves.

of these situations concern the speed divergence/ convergence problem previously mentioned.

Although the B-52 is easier to refuel at higher airspeeds, the basic procedure calls for 255 KIAS. According to the Boeing Military Airplane Company, this is primarily because of airplane fatigue considerations. "It has been determined the airplane fatigue damage rate is much less at 255 KIAS than at higher velocities". (Reference: L. Lee *KC-135 Aerodynamic Flight Characteristics Base Tour Question and Answer Document*, D3-9899-1, 1975, P. 4.)

There also appears to be some flexibility in this 255 KIAS fatigue "speed limit". In telecom with Mr. Otto Praeger, Boeing-Wichita, the higher airspeed was addressed and he stated "a ten-knot increase above the 255 KIAS figure is probably not significant from a fatigue standpoint". He further stated that flight test data on the B-52 air refueling mode of the autopilot was not available for the higher airspeed schedules and that this might be a consideration.

Fuel considerations in the "higher refueling airspeed argument" present an interesting paradox. At 280 KIAS the fuel flow increase is estimated at five percent for B-52 G/H aircraft. Considering that the length of air refueling tracks do not change, the higher TAS means less time on track. Since the biggest increase in B-52 fuel consumption during air refueling results from flying in the tanker downwash, the shorter time would mean less fuel consumed for the average scheduled refueling. Of course, training time would also be cut (approximately five minutes on a one hour track).

In conclusion, higher B-52 refueling airspeeds provide greater power stability and, generally, improve aircraft handling characteristics. Since airplane fatigue is an important factor during air refueling, the basic refueling airspeed of 255 KIAS will probably not change without appropriate engineering and flight dynamics study. Meanwhile, pilots have the latitude to increase airspeed during refueling when conditions warrant. Factors such as aircraft gross weight or pilot proficiency should be the basis for this decision.

BIG INSTRUMENT

AFM 51-37, Change Summary

Captains John C. Conley and Rhett T. Cooper
Instrument Division, 1st Combat Evaluation Group
Barksdale Air Force Base

Change 1, 20 April 1981, to AFM 51-37, Instrument Flying, is now available and should have been posted in your basic manual by now. If you haven't received your change, be sure to check with your publications officer.

There are some major changes we need to become familiar with; e.g., Missed Approach and Holding Procedures, Radar Vectors, Visual Cues when Landing from Instrument Approaches, associated Crew Procedures, and expanded Visual Approach Procedures. These major revisions and other significant changes will be covered in this article. Due to the multitude and length of the changes, the following information is not verbatim and requires your thorough review of designated areas. However, the following material will get us started on our detailed understanding of the new information.

Chapter 1

Compressibility effect is now termed Compressibility Error with a clarified definition. Overall effect on aircraft equipment remains unchanged.

Figure 1-6 (Types of Altitude) reflects changes directed by IMC 79-1 and corresponding definitions.

Forty-Degree Azimuth Error Lock-On should not occur with the newer TACAN sets. However, the pilot should continue to cross-check the bearing with other available navigation aids.

ILS facilities sometimes have associated DME. These are usually found at civilian fields. Some IAPs require TACAN/VOR with associated DME for the initital segment of the approach. Pilots must ensure the proper DME channel is tuned to preclude premature descents.

Chapter 3

"Planning the Instrument Departure" incorporates IMC 80-1 and 2 and provides guidance for flying SIDs used at a civilian field. Civil SIDs assume the aircraft will cross the departure end of the runway at least 35 feet above ground level. Air Force pilots flying civil SIDs must plan to cross the departure end of the runway at least 35 feet above ground level and climb at a rate of at least 200 feet per nautical mile (unless a higher climb gradient is published). In any case, when a SID climb gradient is not depicted, you are expected to climb at 200 feet per nautical mile. When executing a departure procedure or SID, climb on runway heading until reaching 400 feet above the aerodrome elevation, unless otherwise instructed. Some SIDs contain both a climb gradient and takeoff minimums. Since the published takeoff minimums do not apply to USAF aircrews, Air Force pilots must ensure their aircraft performance will meet or exceed the published climb gradient and comply with AFR 60-16.

When reviewing the Instrument Approach Procedure (IAP), ensure the missed approach is compatible with aircraft navigational aids. If the navigational aids are incompatible, alternate missed approach instructions must be coordinated with ATC. This requirement does not preclude practice approaches in VMC.

A VASI lighting system is normally available at locations where VDPs are established and the VASI glidepaths are normally coincident with precision approach glidepaths. If VASI is not installed, the VDP descent is computed from the MDA to the runway threshold using a normal descent (Approximately 3°).

Chapter 4

The self-test mode incorporated into some TACAN sets provides an operational test of the TACAN but does not provide a test of the aircraft antennas. Therefore, ground checks must be completed in accordance with paragraph 4-1m (Normal ground check of "Navigation Equipment and Instruments" and accomplish this check at a designated ground check point when possible.)

When performing any instrument departure, climb to at least 400 feet AGL before initiating a turn unless otherwise instructed.

The use of IFR departures without a SID, departure procedure, or radar service is discouraged. ("Departure procedure" was added to cover any contingency.)

Chapter 5

When maneuvering for holding, the following guidance should be considered. Do not hold directly over a VORTAC facility if the aircraft is TACAN only equipped. Also when you are issued your holding instructions, either for a charted or uncharted holding pattern, the controller should issue you an expect further clearance (EFC) or expect approach clearance (EAC) time.

A new paragraph on descent from holding patterns is added. It clarifies the different descent procedures from holding patterns with a published minimum holding altitude and holding patterns with **no** published minimum holding altitudes. It also defines a holding pattern as a segment of an instrument approach procedure only if it is published as a holding pattern in lieu of a procedure turn.

Figure 5-5 depicting a Minimum Holding Altitude is added.

Chapter 6

This chapter incorporates the information from IMC 79-1 clarifying clearance procedures for proceeding enroute to noncolocation holding/IAD fixes versus an IAF located along the route of flight to the holding fix.

The general information for Low Altitude Approaches has been expanded and revised to clarify when a procedure turn or holding pattern (in lieu of PT) prior to the FAF "will not be flown" unless cleared by ATC. In any case, if you desire to make additional circuits in a holding pattern to lose excessive altitude or better establish on course, prior to departing the FAF, you must advise ATC.

Under low altitude Holding Pattern (in lieu of Procedure Turn) the changed verbage now says that if you are cleared for the approach after established in the holding pattern, you may "make an immediate turn inbound or continue your required timing outboard and execute a straight-in approach."

The general procedures for Radar Vectors have been changed to align them with the Air Traffic Control Handbook. The new information defines where the radar controller will position your aircraft for a final approach for different weather conditions. Note that these procedures do not apply to vectors for a visual approach.

Pilot responsibilities during radar vectors have been expanded. Once you are cleared and are established on course for a published routing or IAP, comply with all course and altitude restrictions as depicted on the approach procedure; except that you must not climb above the last assigned altitude to comply with published altitude restrictions unless so instructed by the controlling agency.

Transitioning from Instrument to Visual Flight Conditions has been expanded. Visual illusions due to relative runway length, width, and approach lighting in relation to vertical height and motion are discussed. Increased emphasis on reference to flight instruments and monitoring the PAR controllers instructions is recommended to ensure against dangerously high rate of descent after the runway environment is in view.

Crew procedures during low visibility approaches now include the technique by which the pilot not flying the aircraft continues a composite crosscheck of flight instruments from DH or MDA to touchdown and notifies the pilot of excessive deviations in descent rates, glide slope, course, and airspeed.

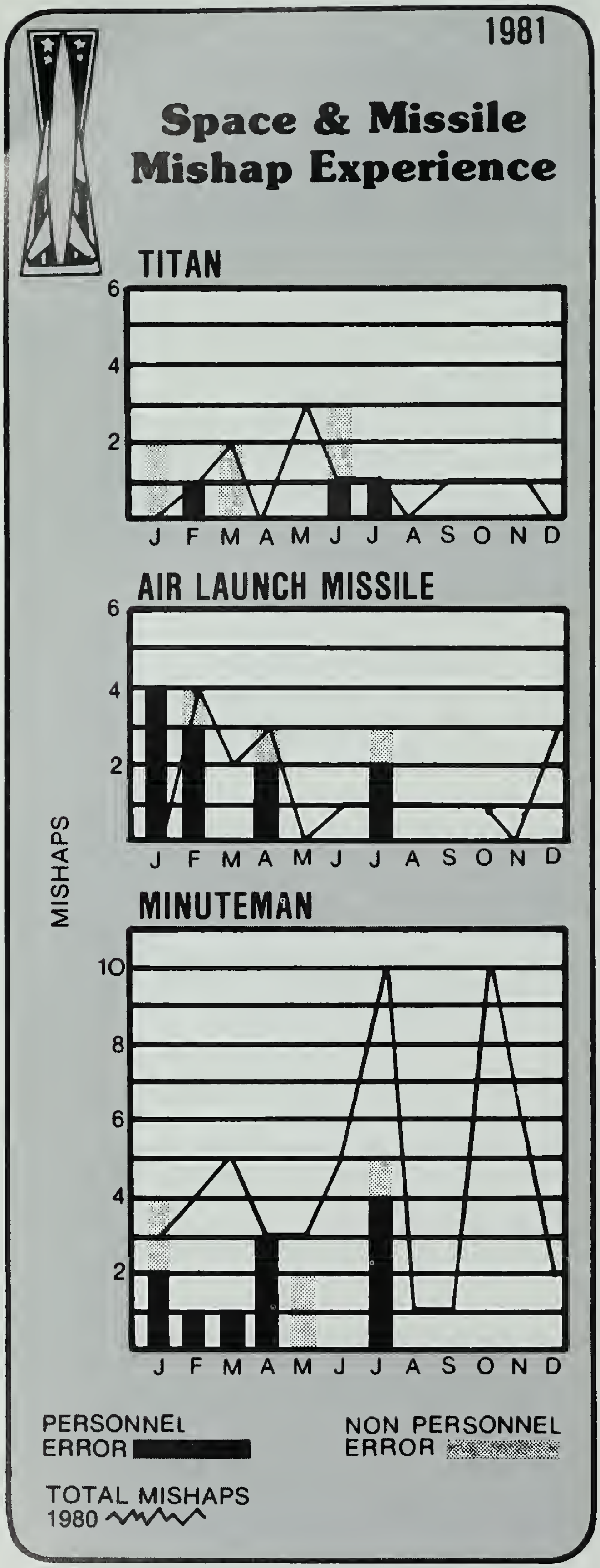
Criteria for flying circling approaches has been expanded to alleviate any misinterpretations for fixed wing or helicopter pilots. To provide the pilot more familiar perspective and better visual cues, fly circling approaches at an altitude higher than the circling MDA, up to your normal VFR traffic pattern altitude, if weather permits. Do not descend below circling MDA until in a position to place the aircraft on a normal glidepath to the landing runway.

The missed approach path is designed to return the aircraft to an altitude providing enroute obstruction clearance.

When accomplishing a missed approach, a pilot will now request ATC clearance for a specific action; that is, to an alternate airport, another approach, or holding.

Information on Visual Approaches has been redefined and expanded to include ATC responsibilities and pilot responsibilities when a visual approach clearance is given. The text details what is expected of the pilot for visual separation from aircraft and wake vortex separation.

Hopefully this article has gotten us started on our **thorough** review of recent changes to AFM 51-37. We must now acquaint ourselves with the finite details of the revised material. While we're at it, let's take time to review the entire book once more — it's excellent reading and, more importantly, a primary key to our survivability.



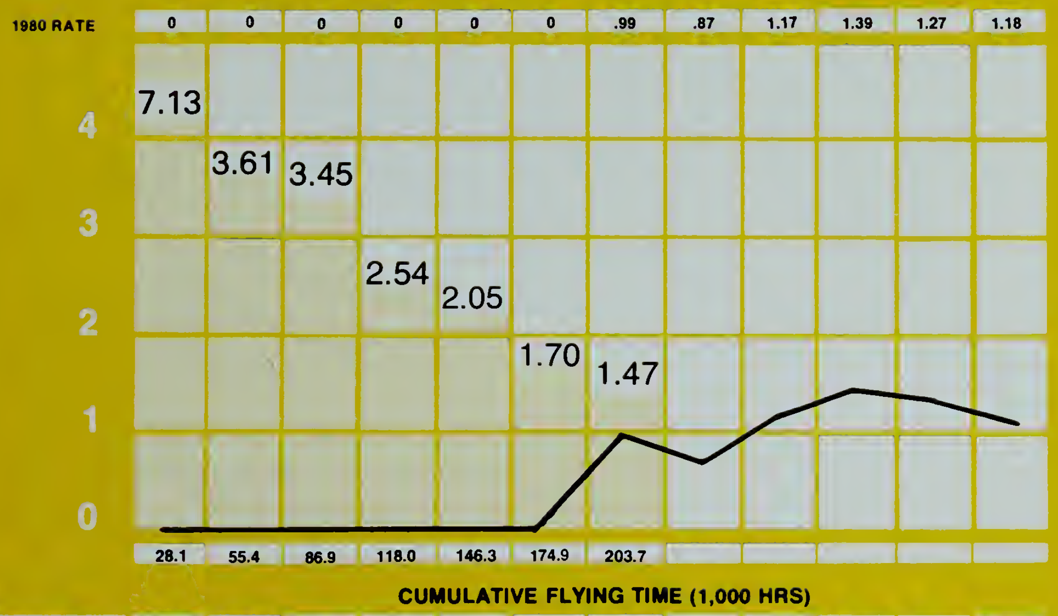
MISSILE MISHAPS

PAINFUL LESSON. A facility maintenance team member reinstalled a soft support building exhaust fan following R&R of the diesel generator. The team member had to be on top of the generator for fan installation due to limited space for a more suitable work platform. The fan electrical connection was made and power applied when the fan soon began to clang and make a loud noise. Power was removed, and the team member began to dismount from the generator when his foot slipped. In an effort to catch his balance, his right hand contacted the fan blades resulting in a severly lacerated right index finger. Lesson learned: During testing of exhaust fans, the team chief should insure personnel are in a safe position away from the fan.

OOPS! WRONG SIZE. A refurbishment team was instructed to open the personnel access hatch (PAH) using alternate procedures. T.O. 21M-LGM30F-2-10-1, Table of Special Tools and Materials, states that a three-fourth inch steel sling will be used to raise the hatch door. The cable used was three-eighths inch. The team failed to use the proper equipment as prescribed in tech data. As a result the cable broke and the hydraulic actuators were damaged.

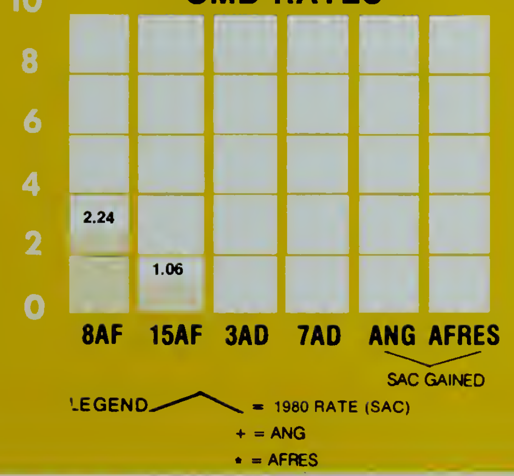
1981 Flying Safety Rate

SAC CLASS A MISHAP RATE (PER 100,000 FLYING HRS)



MISHAPS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1980	0	0	0	0	0	0	2	0	1	1	0	0
1981	2	0	1	0	0	0	0					

1981 SUBORDINATE CMD RATES



MISHAP STATUS

KC-135 A	JAN '81
FB-111A	JAN '81
RC-135S	MAR '81

Fatigue

Maj Don Eye
1 ACCS
Offutt AFB

In today's world of modern medicine and scientific marvels, the human body still remains basically a mystery. Each day something new is discovered, but so far there has been no substitute for rest. In the aircrew world we call it **crew rest**.

Crew rest is one of the last remaining privileges associated with the Wilbur and Orville invention. It is considered so important that an entire chapter in AFR 60-1 is devoted to it. The purpose of crew rest is to prevent the onset of fatigue during a crew member's defiance of gravity while operating Uncle Sam's airplane.

Many man-hours are spent insuring that each crew member is allowed adequate rest. The schedule is scrutinized by everyone up to and including the commander, but in the final analysis, the responsibility is yours, the crew member.

There is an old saying, "If you hoot with the owls tonight, you can't soar with the eagles tomorrow". A recent review of the National Transportation Safety Board data by *Aircraft Owners and Pilots'* magazine listed pilot fatigue as cause/factor in 325 accidents in U.S. civil aviation for the years 1970 through 1979. Of these, 44 percent were fatal. An interesting fact is that the majority of the accidents occurred during June, July, and August. Long hours without rest was the main factor cited. It appears that when the weather turns warm and the days get longer, our attention to crew rest gets shorter. Sleeping is traditionally restricted to the night hours and the body just wants to work in the yard, play with the kids or do whatever it likes to do as long as the sun is up. In other words "make hay while the sun shines".

What is fatigue anyway? In his book, *Aviation Medicine*, Dr. Kenneth G. Bergin describes fatigue

as "a progressive decline in man's ability to carry out his appointed task, which may become apparent through deterioration in the quality of work, lack of enthusiasm, inaccuracy, lassitude, ennui, disinterestedness, a falling back in achievement or some other more definable symptoms."

Fatigue can be induced from four sources: mental, muscular, psychological and physiological. Muscular fatigue results from mowing a lot of grass, taking out the garbage, and other strenuous exercise. Its effects on the old body appreciate over a period of time.

Mental fatigue is a tiredness of the brain which many of us have had since birth. The workload in the cockpit can readily cause mental fatigue, especially where attention is extremely important. Bad weather, poor equipment, and check rides are common causes.

Physiological fatigue can be caused by noise, vibration, irregular eating, and sleeping habits. Have you ever been on a swing around the country and grabbed a burger at the flightline snack bar? When you made your final stop, it was off to town to "run the locals". Well, you have experienced physiological fatigue shortly thereafter.

Psychological factors are fear, problems at home, illness in the family, financial worries, your dog is pregnant, or you just found out that your extra passenger is the check pilot.

How do you know you are fatigued? Generally someone besides you will notice first, but here is a checklist. Watch for this as you fly:

- **Accepting lower performance standards in the operation of the aircraft (not maintaining altitude or heading, for example).**
- **Interrupting instrument scanning patterns (fixing on one or two instruments).**
- **Becoming rough on flight controls.**
- **Making mistakes on simple tasks and blaming these mistakes on the aircraft, not on individual ability.**
- **Becoming aware of and spending more time thinking about physical discomforts.**
- **Reducing attention span (during preflight or when making calculations).**
- **Increasing reaction time (especially critical during an emergency).**

Some other symptoms could include burning eyes, headaches, shortness of breath, sweating, loss of appetite, heartburn, constipation, and nightmares.

What is the point in all this? You have been given a **multibuck** aircraft with lots of good folks on board and a difficult mission to perform. First, get the good folks back safe. Second, keep the shiny side up on the aircraft and last, complete the mission.

You can't do any of these well if you are tired before you get started.

PROFESSIONAL PERFORMERS

FLYING CREW

A B-52G departed Barksdale AFB on an HHD mission. Capt Louis W. Buckner, pilot, was in the left seat and flying with his normal stan/eval crew. Other members of Crew S-02 include: Capt Thomas E. Stickford, copilot; Capt Michael R. Witherspoon, RN; 1Lt Timothy B. Vigil, navigator; Capt Randolph P. Allen, EWO; and SSgt Michael Stailey, gunner.

Climbing through 14,000 feet, the aircraft experienced total DC power failure. Many electrical systems were lost and the pilots had ony emergency lighting, some panel lighting, emergency instruments and fuel quantity indications. There was no power to the navigational equipment and the only operable radio was the HF. Because of bad weather at Barksdale, Capt Buckner decided to continue the flight using dead reckoning navigation. Their command post was contacted on HF and they coordinated communications between the aircraft, wing staff, Boeing and ARTC. Another B-52G was directed off the wing of Capt Buckner's aircraft. The situation was compounded by an inability to transfer or burn fuel because there was no electrical power to the pumps. As fuel in the main tanks was depleted, the aircraft CG moved toward the aft limit for flight. Vectors were given to Wright Patterson AFB because it was VFR and has a 12,600-foot runway plus a 1,000-foot overrun. The aircraft interior was cooling to outside air temperature requiring the crew to put on cold weather gear to prevent frostbite. Icing conditions were encountered and the pilots' windows began to ice over due to the inoperative anti-ice system. A descent to 10,000 feet was requested and given. On a right turn, engines one and two flamed out because of fuel pump cavitation and could not be restarted. The other B-52G maneuvered in front, and Capt Buckner rejoined on his wing in an extended fingertip position. An immediate landing was necessary because CG was near the aft limit and only one approach could be flown due to the aft CG, engine out condition and other factors. Capt Buckner maintained position on the other B-52 until the runway was in sight at eight miles. A visual, six-engine, no-flap approach and landing was then made at a gross weight of 375,000 pounds. The computed landing roll with drag chute was 10,800 feet. Braking required to stop the aircraft within the confines of the runway made tire failure and brake fires imminent. The aircraft touched down 750 feet down the runway and came to a stop on centerline 1300 feet from the departure end. The crew shut down all equipment and engines and egressed the aircraft. One tire was blown and the brakes caught fire and were extinguished by fire department personnel. Boeing later reported that this was the heaviest no-flap landing ever made in a B-52. Capt Buckner's superior airmanship and his crew's outstanding coordination and knowledge of aircraft systems prevented the loss of a valuable aircraft.

Missile Crew of the Month

Crew R-023, 381st SMW, McConnell AFB: MCCC 1Lt James E. Hill, DMCCC 2Lt Sheila L. Tow, MSAT A1C Robert L. Williams, and MFT Amn Tony D. Sontag.

During an alert tour training session, crew R-023 noticed that the control center air pressure gauge reading was abnormally low. The MCCC dispatched the MSAT and MFT to silo level seven to check the status of the air compressors. They discovered the utility air receiver tanks indicated only 80 psi and the primary air compressor gauge reading only 100 psi. The crew quickly switched over to the standby compressor, but the air pressure continued to drop precariously. At this time, the diesel start air receiver low indicator lit up and the MSAT and MFT were directed to inspect the air compressors. All were satisfactory but pressure continued to drop so the MCCC and DMCCC directed further troubleshooting during which the utility air receiver supply line was discovered to have a major leak. The air pressure was isolated, the leak fixed and the air compressors stabilized for normal operation. Because of their professionalism and thorough attention to detail, crew R-023 saved their missile from being washed down and their sortie remained on full alert status.

Maintenance Man of the Month

Sergeant Donald R. Humphrey, 43d Strategic Wing, Andersen AFB, is SAC Maintenance Airman of the Month. Sgt Humphrey is a professional who possesses a tremendous amount of technical ability. Of the last 27 periodic inspections he performed, 16 were rated outstanding under the rigid MSET criteria. Seven other inspections had no missed carded items and resulted in either excellent or satisfactory ratings. Two of the inspections were followed up by a SAC MSET check and both were discrepancy free. Additionally, Sgt Humphrey was evaluated by MSET on a wheel bearing clean, inspect, repack and installation task. Again, no discrepancies were noted. His ability to explain complex concepts and principles quickly and easily made him invaluable as a trainer. He also recognizes the need for an aggressive and positive safety program. Recently, while preparing for a typhoon evacuation, he remained on duty, beyond his shift. After directing the storage and protection of all AGE, he returned on his own to assist in returning the equipment to the flight line once the typhoon passed. The outstanding accomplishments of Sgt Humphrey during his Air Force career are remarkable. He is a dedicated noncommissioned officer and a valuable individual to SAC and the maintenance effort of the United States Air Force.

HALL OF FAME

TACTICAL FLYING

OVER TWENTY-FIVE YEARS

170 AREFG, McGuire (NJANG)	Feb '56

OVER TWENTY-THREE YEARS

171 AREFW, Greater Pittsburgh (PAANG)	Mar '58
157 AREFG, Pease (NHANG)	June '58

OVER TWENTY-TWO YEARS

940 AREFG, Mather (USAFR)	May '59

OVER TWENTY-ONE YEARS

307 AREFG, Travis	Sep '59

OVER TWENTY YEARS

151 AREFG, Salt Lake City (UTANG)	Feb '61
161 AREFG, Sky Harbor (AZANG)	Apr '61
126 AREFW, Chicago O'Hare (ILANG)	Apr '61
134 AREFG, McGhee Tyson (TNANG)	Aug '61

OVER NINETEEN YEARS

11 SG, Fairford	Feb '62
340 AREFG, Altus	Jun '62
96 BMW, Dyess	Aug '62

OVER EIGHTEEN YEARS

19 BMW, Robins	Aug '63

OVER SIXTEEN YEARS

160 AREFG, Rickenbacker (OHANG)	Dec '64
320 BMW, Mather	Jul '65

OVER FOURTEEN YEARS

452 AREFW, March (USAFR)	Sep '66
92 BMW, Fairchild	Feb '67
55 SRW, Offutt	Jul '67
2 BMW, Barksdale	Aug '67

OVER TWELVE YEARS

5 BMW, Minot	Feb '69

OVER ELEVEN YEARS

42 BMW, Loring	Sep '69
141 AREFW, Fairchild (WAANG)	Oct '69
28 BMW, Ellsworth	May '70

OVER NINE YEARS

101 AREFW, Bangor (MEANG)	Mar '72
306 SW, Mildenhall	Apr '72
416 BMW, Griffiss	May '72
305 AREFW, Grissom	Aug '72

OVER EIGHT YEARS

379 BMW, Wurtsmith	Apr '73

OVER SEVEN YEARS

931 AREFG, Grissom (USAFR)	Feb '74
384 AREFW, McConnell	Mar '74
189 AREFG, Little Rock (ARANG)	May '74

OVER SIX YEARS

43 SW, Andersen	Dec '74

OVER FIVE YEARS

68 BMW, Seymour Johnson	Sep '75

OVER FOUR YEARS

410 BMW, K.I. Sawyer	Apr '77
190 AREFG Forbes (KSANG)	Apr '77
128 AREFG Milwaukee (WIANG)	Jul '77

ICBM

OVER SIXTEEN YEARS

1 STRAD, Vandenberg	Sep '64

OVER ELEVEN YEARS

341 SMW, Malmstrom	Apr '70

OVER EIGHT YEARS

390 SMW, Davis-Monthan	Jul '73

OVER SIX YEARS

351 SMW, Whiteman	Oct '74
91 SMW, Minot	Nov '74

OVER FIVE YEARS

321 SMW, Grand Forks	Feb. '76

To gain listing in the Hall of Fame, a SAC or ARF unit must be Class A mishap-free for 48 months.

*U.S. Government Printing Office
1981 — 765-047/7

SAC
SAFETY SCREEN

307 AREFG, Travis Crew E-10: P Maj Ernesto R Ortega, CP Capt Jean M Fernand, N Capt Richard G Viray, BO TSgt John M Rytkonen

307 AREFG, Travis Crew E-134: P Capt Jose F Rodriguez, CP 1LT Douglas Borter, N Capt Gordon G Bailey, BO Sgt Richard E Davis

320 BMW, Mather Crew E-17: P Capt William J Casement, CP Capt Kenneth W Nuhn, RN Capt Donald M Morris, N 2Lt John J Rynda, EW 1Lt Charles F Waddle, AG Amn Anthony R Mazzone

320 BMW, Mather Crew E-110: P Maj Robert E Smith, CP 1Lt Thomas W Pearson, N 1Lt Gary A Leavitt, BO SSgt William F Shippey

931 AREFG, Grissom Crew: P Capt Douglas W Moser, CP Capt Randolf H Schwerdt, N Capt Duane R Schaefer, BO TSgt Franklin J Meyers

341 SMW, Malmstrom Crew E-026: MCCC Capt Robert H Krause, DMCCC 1Lt Thomas J Warsheski

390 SMW, Davis-Monthan Crew R-013: MCCC Lt Charles Vickrey, DMCCC Lt Ken Varney, MSAT Sgt Harold Pine, BMFT SrA Ray Finley

90 SMW, Francis E Warren Crew E-065A: MCCC 1Lt Glen D Gary, DMCCC 2Lt Raymond F Knapp

44 SMW, Ellsworth Crew R-095: MCCC Capt Albert S Borchik, DMCCC 1Lt David B Metzger

308 SMW, Little Rock Crew E-034: MCCC 1Lt Thomas J League, DMCCC 2Lt Julius V Coco, MSAT Sgt Timothy L Downs, MFT SSgt Hozie D Graham

351 SMW, Whiteman Crew E-145: MCCC 1Lt Lawrence S Kingsley, DMCCC 2Lt Kerry W Davis

11 AREFS, Altus Crew E-124: P Capt Michael Ford, CP Lt Dennis Kaan, N Lt David Adams, BO A1C James Morman

11 AREFS, Altus Crew E-121: P Capt James J Deuel, CP Capt Wayne G Terry, N Lt Raymond E King, BO SSgt Carmen N Vallejo

2 BMW, Barksdale Crew R-112: P Capt John R Dockery, CP Capt Alan W Dreher, N 1Lt Roy K Morris, BO Sgt Patricia K Langham

2 BMW, Barksdale Crew R-153: P Capt Craig S French, CP Capt Lee J Douet, N Capt Arie Freeman, BO A1C James H Brock

305 AREFS, Grissom Crew R-126: P Maj Ronald Facundus, CP Capt Ronald Studkey, N 1Lt Michael Dent, BO SSgt Patrick Ryan

70 AREFS, Grissom Crew E-180P: P Capt Gary E Williams, CP Capt Ronald M Mladic, N Capt Franklin E Pruismann, BO SSgt James A Yarbrough

UNIVERSITY OF FLORIDA
3 1262 09304 9624

GIANT SWORD 1981